

Appl. No. 10/604,860
Reply to Office action of September 07, 2007

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Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the application:

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Listing of Claims:

Claim 1 (currently amended) A method adapted to an optical storage device for writing data to an optical storage medium, the optical storage device having a memory and a pickup, the memory storing a predetermined plurality of different sets of write strategy parameters, the method comprising:

10 providing an RLL modulation waveform to the optical storage device, the RLL modulation waveform including a previous land section, a current pit section, and a next land section;

15 choosing a set of 2T write strategy parameters from the plurality of sets of write strategy parameters stored in the memory according to waveform lengths of the previous land section, the current pit section, and the next land section;

generating a write time waveform according to the chosen set of write strategy parameters; and

20 driving the pickup with the write time waveform, so as to write data corresponding to the RLL modulation waveform to the optical storage medium;

25 wherein there is a delay according to waveform lengths of the previous land section, the current pit section, and the next land section from a trailing edge of a last pulse of the write time waveform to a position the write time waveform switches back to an erase power state.

Claim 2 (previously presented) The method of claim 1 wherein the RLL modulation waveform has a base period, the method further comprising:

30 setting the write time waveform to the erase power state before the optical

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storage device writes data; and
setting the write time waveform to a bias power state and inserting a plurality
of pulses into the write time waveform when the optical storage device
writes data, and each pulse switching the write time waveform from the
5 bias power state to a write power state.

Claim 3 (previously presented) The method of claim 2 wherein the write strategy
parameters include a plurality of first parameters and a plurality of second
parameters, each of the first parameter representing a delay from a leading edge
10 of the current pit section to a leading edge of a first pulse of the write time
waveform, each of the second parameter representing a delay from a trailing edge
of the first pulse of the write time waveform to a leading edge of a second pulse
of the write time waveform, the method further comprising:
choosing a first parameter from the plurality of first parameters according to
15 waveform lengths of the previous land section and/or the current pit
section; and
choosing a second parameter from the plurality of second parameters
according to waveform lengths of the previous land section and/or the
current pit section.

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Claim 4 (previously presented) The method of claim 3 wherein a trailing edge of the
first pulse of the write time waveform is in alignment with a position twice the
base period posterior to a leading edge of the current pit section.

25 Claim 5 (original) The method of claim 3 wherein a length of the first pulse of the
write time waveform is equal to a length of twice the base period subtracting the
chosen first parameter.

Claim 6 (original) The method of claim 2 wherein the write strategy parameters
30 include a plurality of sets of repeating pulse parameters, each set of repeating

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pulse parameters having a plurality of repeating pulse parameters, the repeating pulse parameters representing pulse lengths of all but the first and the last pulses, a length between leading edges of any two consecutive pulses among all but the first and the last pulses being equal to twice the length of the base period, the
5 method further comprising:

choosing a set of repeating pulse parameters from the sets of repeating pulse parameters according to a waveform length of the current pit section.

10 Claim 7 (original) The method of claim 6 wherein the repeating pulse parameters in the same set of repeating pulse parameters are equal to one another.

Claim 8 (original) The method of claim 6 wherein the repeating pulse parameters in the same set of repeating pulse parameters are not necessarily equal to one
15 another.

15 Claim 9 (previously presented) The method of claim 2 wherein the write strategy parameters include a plurality of third parameters, a plurality of fourth parameters, and a plurality of fifth parameters, each third parameter representing a delay from a position twice the base period prior to the trailing edge of the
20 current pit section to a leading edge of a last pulse of the write time waveform, each fourth parameter representing a period of the last pulse of the write time pulse, each fifth parameter representing a delay from a position one base period prior to the trailing edge of the current pit section to a position the write time waveform switches back to the erase power state, the method further comprising:
25 choosing a third parameter from the plurality of third parameters according to waveform lengths of the current pit section and the next land section;
choosing a fourth parameter from the plurality of fourth parameters according to the waveform length of the current pit section; and
choosing a fifth parameter from the plurality of fifth parameters according
30 to the waveform lengths of the current pit section and the next land

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section.

5 Claim 10 (previously presented) The method of claim 9 wherein the delay from a trailing edge of the last pulse of the write time waveform to a position the write time waveform switches back to the erase power state is equal to the chosen fifth parameter plus a duration of one base period subtracting the chosen third parameter subtracting the chosen fourth parameter.

10 Claim 11 (previously presented) The method of claim 2 wherein a delay from a trailing edge of any but the first and the last pulses in the write time waveform to a leading edge of the next pulse is equal to a duration twice the base period subtracting a length of the pulse.

15 Claim 12 (original) The method of claim 2 wherein waveform lengths of the previous land section, the current pit section, and the next land section are all multiples of the base period, ranging from three times the base period to eleven times the base period.

20 Claim 13 (original) The method of claim 2 wherein levels of the erase power state, the bias power state, and the write power state are predetermined values, and do not vary with different RLL modulation waveforms.

Claim 14 (original) The method of claim 1 being adapted to a CD burner.

25 Claim 15 (original) The method of claim 14 being capable of writing data onto a CD-RW.

Claim 16 (original) The method of claim 1 being adapted to a DVD burner.

30 Claim 17 (original) The method of claim 16 being capable of writing data onto a

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DVD-R.

Claim 18 (original) The method of claim 16 being capable of writing data onto a
DVD-RW.

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Claim 19 (original) The method of claim 1 wherein the RLL modulation waveform is
an eight-to-fourteen modulation waveform.

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Claim 20 (previously presented) The method of claim 3 wherein a trailing edge of the
first pulse of the write time waveform is in alignment with a position of a leading
edge of the current pit section.

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Claim 21 (currently amended) A method adapted to an optical storage device for
writing data to an optical storage medium, the optical storage device having a
memory and a pickup, the method comprising:

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storing a predetermined plurality of different sets of write strategy parameters
in the memory prior to receiving an RLL modulation waveform, the write
strategy parameters including a plurality of sets of repeating pulse
parameters, each set of repeating pulse parameters having a plurality of
repeating pulse parameters, each of the repeating pulse parameters
uniquely corresponding to a pulse of all but first and last pulses and
determining the length of the corresponding pulse; the repeating pulse
parameters representing pulse lengths of all but first and last pulses;

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receiving the RLL modulation waveform, the RLL modulation waveform
including a previous land section, a current pit section, and a next land
section;

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choosing a set of write strategy parameters from the plurality of sets of write
strategy parameters stored in the memory according to waveform lengths
of the previous land section, the current pit section, and the next land
section;

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generating a write time waveform according to the chosen set of write strategy
parameters; and
driving the pickup with the write time waveform, so as to write data
corresponding to the RLL modulation waveform to the optical storage
5 medium.

Claim 22 (previously presented) The method of claim 21 wherein a length between
leading edges of any two consecutive pulses among all but the first and the last
pulses is equal to twice the length of a base period, the method further
10 comprising:
choosing a set of repeating pulse parameters from the sets of repeating pulse
parameters according to a waveform length of the current pit section.

Claim 23 (previously presented) The method of claim 22 wherein the repeating pulse
15 parameters in the same set of repeating pulse parameters are equal to one another.

Claim 24 (previously presented) The method of claim 22 wherein at least two of the
repeating pulse parameters in the same set of repeating pulse parameters are not
20 equal to one another.